इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”
Mazdoor Kisan Shakti Sangathan
“The Right to Information, The Right to Live”

“पुराने को छोड नये के तरफ”
Jawaharlal Nehru
“Step Out From the Old to the New”

IS 9000-22 (1983): Basic environmental testing procedures for electronic and electrical items, Part 22: Fine mist test [LITD 1: Environmental Testing Procedure]

“ज्ञान से एक नये भारत का निर्माण”
Satyanarayan Gangaram Pitroda
“Invent a New India Using Knowledge”

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

Made Available By
Public.Resource.Org

“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”
Bhartṛhari—Nītiśatakam
“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE

BRUTUM FULMEN
IGNORANTIA JURIS NON EXCUSAT
PROTECTED BY COPYRIGHT

IS : 9000 (Part XXII) - 1983
(Reaffirmed 2004)

Indian Standard

BASIC ENVIRONMENTAL TESTING PROCEDURES FOR ELECTRONIC AND ELECTRICAL ITEMS

PART XXII FINE MIST TEST

UDC 621·38·038 + 621·31 : 620·193·21

© *Copyright* 1983

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 2

April 1983

Indian Standard

BASIC ENVIRONMENTAL TESTING PROCEDURES FOR ELECTRONIC AND ELECTRICAL ITEMS

PART XXII FINE MIST TEST

Environmental Testing Procedures Sectional Committee, LTDC 2

Chairman	*Representing*
LT-GEN D. SWAROOP	Ministry of Defence (R & D), New Delhi
Members	
DR K. CHANDRA	National Physical Laboratory (CSIR), New Delhi
SHRI K. C. CHHABRA (*Alternate*)	
CONTROLLER, DGI	Ministry of Defence (DGI), Bangalore
LT-COL V. K. KHANNA (*Alternate*)	
DR P. K. DUTTA	Peico Electronics & Electricals Ltd, Bombay
SHRI V. NARAYANAN (*Alternate*)	
SHRI GHASITA SINGH	Central Electronics Engineering Research Institute (CSIR), Pilani
SHRI B. P. GHOSH	National Test House, Calcutta
SHRI B. C. MUKHERJEE (*Alternate*)	
SHRI G. R. GHOSH	Society of Environmental Engineers, Bangalore
SHRI T. C. GOSALIA	National Radio & Electronics Co Ltd, Bombay
JOINT DIRECTOR STANDARDS (S&T)/ TESTS, RDSO	Research, Designs & Standards Organization, Ministry of Railways, Lucknow
JOINT DIRECTOR STANDARDS (S&T)/LAB, RDSO (*Alternate*)	
SHRI S. P. KULKARNI	Radio Electronic & Television Manufacturers' Association, Bombay
DR P. K. DUTTA (*Alternate*)	
SHRI H. C. MATHUR	Posts and Telegraphs Board, New Delhi
SHRI U. R. G. ACHARYA (*Alternate*)	
SHRI I. C. MATHUR	Directorate of Technical Development & Production (Air), Ministry of Defence
SHRI S. DESIKAMANI (*Alternate*)	
COL B. S. NAGENDRA RAO	Electronics Corporation of India Ltd, Hyderabad
SHRI T. D. VEERVANI (*Alternate*)	
SHRI K. R. ANANDAKUMARAN NAIR	Lucas-TVS Limited, Madras
SHRI C. RANGANATHAN (*Alternate*)	

(*Continued on page* 2)

© *Copyright* 1983
INDIAN STANDARDS INSTITUTION
This publication is protected under the *Indian Copyright Act* (XIV of 1957) and reproduction in whole or in part by any means except with written permission of the publisher shall be deemed to be an infringement of copyright under the said Act.

(*Continued from page* 1)

Members	*Representing*
BRIG Y. NIRULA	Instrumentation Ltd, Kota
SHRI A. P. GUPTA (*Alternate*)	
SHRI N. V. PANDIT	Bharat Heavy Electricals Ltd, Bhopal
DR O. P. CHHABRA (*Alternate* I)	
SHRI B. K. MAHAJAN (*Alternate* II)	
SHRI D. V. PETKAR	Bhabha Atomic Research Centre, Trombay, Bombay
SHRI JAGDISH LAL (*Alternate*)	
SHRI P. S. K. PRASAD	Bharat Electronics Ltd, Bangalore
SHRI D. S. GOPALAKRISHNA (*Alternate*)	
SHRI P. V. RAO	Indian Telephone Industries Ltd, Bangalore
SHRI B. VIRESALINGAM (*Alternate*)	
SHRI K. K. TANEJA	Directorate General of Technical Development, New Delhi
DR R. C. TRIPATHI	Department of Electronics, New Delhi
SHRI A. K. JAIN (*Alternate*)	
COL J. VARGHESE	Ministry of Defence (R&D), Bangalore
SHRI P. K. SHUKLA (*Alternate*)	
SHRI H. C. VERMA	All India Instrument Manufacturers' & Dealers' Association, Bombay
DEPUTY SECRETARY, IMDA (*Alternate*)	
SHRI R. C. JAIN, Head (Electronics)	Director General, ISI (*Ex-officio Member*)

Secretary

SHRI HARCHARAN SINGH
Deputy Director (Electronics), ISI

Panel for Climatic Tests, LTDC 2 : P7

Convener	
SHRI P. S. K. PRASAD	Bharat Electronics Ltd, Bangalore
Members	
SHRI D. S. GOPALAKRISHNA (*Alternate* to Shri P. S. K. Prasad)	
CDR B. BOSE	Naval Headquarters, New Delhi
LT-CDR R. KUMAR (*Alternate*)	
SHRI K. C. CHHABRA	National Physical Laboratory (CSIR), New Delhi
DR P. K. DUTTA	Peico Electronics & Electricals Ltd, Bombay
SHRI V. NARAYANAN (*Alternate*)	
SHRI G. R. GHOSH	Ministry of Defence (DGI)
SHRI S. G. BHAT (*Alternate*)	
SHRI JAGDISH LAL	Bhabha Atomic Research Centre, Trombay, Bombay
SHRI J. S. RAJU	Ministry of Defence (R&D), Bangalore
SHRI P. K. SHUKLA (*Alternate*)	
SHRI C. RANGANATHAN	Lucas-TVS Ltd, Madras
SHRI P. V. RAO	Indian Telephone Industries Ltd, Bangalore
SHRI B. VIRESALINGAM (*Alternate*)	
SHRI V. V. SURYANARAYANA	Electronics Corporation of India Ltd, Hyderabad

Indian Standard

BASIC ENVIRONMENTAL TESTING PROCEDURES FOR ELECTRONIC AND ELECTRICAL ITEMS

PART XXII FINE MIST TEST

0. FOREWORD

0.1 This Indian Standard (Part XXII) was adoped by the Indian Standards Institution on 17 February 1983, after the draft finalized by the Environmental Testing Procedures Sectional Committee had been approved by the Electronics and Telecommunication Division Council.

0.2 The differences in environmental testing procedures for component type items and equipment type items are fast disappearing in the context of technological developments. It is, therefore, felt necessary to have uniform testing procedures wherever possible. This series of standards on enviromental testing procedures (IS : 9000) has been prepared with this objective. This is also in line with the principle adopted by IEC/TC 50 'Environmental testing' in developing unified series of standards on environmental testing procedures by the International Electrotechnical Commission.

0.2.1 It is proposed to withdraw the existing Indian Standards, namely, IS : 589-1961* and IS : 2106† series dealing with environmental tests for electronic components and equipment respectively, as soon as the tests mentioned therein are covered in the new series (IS : 9000).

0.3 While preparing this standard, assistance is derived from JSS 55555-1977 'Environmental test methods for electronic and electrical equipment', issued by Directorate of Standardization, Ministry of Defence, India.

0.4 In reporting the result of a test made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS : 2-1960‡.

---

*Basic climatic and mechanical durability tests for components for electronic and electrical equipment (*revised*).

†Environmental tests for electronic and electrical equipment.

‡Rules for rounding off numerical values (*revised*).

1. SCOPE

1.1 This standard (Part XXII) specifies the details of the procedure for application of fine mist test on electronic and electrical items as a part of the basic environmental testing procedures.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions and explanation of terms given in IS : 9000 (Part I)-1977* shall apply.

3. OBJECT

3.1 The object of this test is to determine the suitability of electronic and electrical items for use when exposed to conditions of fine mist of water.

4. TEST EQUIPMENT

4.1 The test equipment used for this test shall be an enclosure of adequate size having facilities for producing a fine mist of tap water under laboratory atmospheric conditions. Fine mist of water may be generated by directing an air jet across the top of a fine jet connected to a pipe, immersed in or connected to a water supply.

> NOTE — For small items, a test chamber similar to that specified for salt mist test [*see* IS : 9000 (Part XI)-1983†] may be used with the exception that fresh tap water shall be used instead of salt solution. For larger items, a suitable enclosure with a number of jets shall be used.

5. INITIAL MEASUREMENTS

5.1 The item shall be visually inspected and electrically and mechanically checked, as required by the relevant specification.

6. CONDITIONING

6.1 The item under test, while being under the laboratory atmospheric conditions and in its 'unpacked' and 'switched-off' condition shall be introduced into the test enclosure, the latter also being under the same conditions.

6.2 The item, in its normal operational attitude, shall then be exposed to the fine mist of water for a period of one hour.

---

*Basic environmental testing procedures for electronic and electrical items: Part I General.

†Basic environmental testing procedures for electronic and electrical items: Part XI Salt mist test.

6.3 If required by the relevant specification, the item shall be operated and a performance check carried out during the last 30 min of the period specified in **6.2**.

6.4 The item shall be removed from the test enclosure and examined for ingress of water.

7. RECOVERY

7.1 The item shall be allowed to remain under standard recovery conditions for a period of 2 to 4 hours.

8. FINAL MEASUREMENTS

8.1 The item shall be visually inspected and electrically and mechanically checked, as required by the relevant specification.

9. INFORMATION TO BE GIVEN IN THE RELEVANT SPECIFICATION

9.1 When this test is included in the relevant specification, the following details shall be given as far as they are applicable:

	Clause Ref
a) Initial measurements	5
b) Performance checks required	6.3
c) Final measurements	8
d) Any deviation from the normal test procedure	—

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

QUANTITY	UNIT	SYMBOL
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

QUANTITY	UNIT	SYMBOL
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

QUANTITY	UNIT	SYMBOL	DEFINITION
Force	newton	N	1 N = 1 kg.m/s^2
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2